AT-AR415S

Secure Modular Router

AT-AR415S

1 x 10/100BASE-T WAN port
4 x 10/100BASE-T LAN ports
1 x asynchronous port
1 x PIC bay
Integrated Security Engine

The AT-AR415S is a secure modular router offering performance, flexibility and security for small to medium-sized business. Packaged in a compact one-rack unit chassis, this versatile router provides five 10/100 Fast Ethernet interfaces and supports a variety of Port Interface Cards (PICs).

For the WAN network, the AT-AR415S features one 10/100Mbps Ethernet Port. Also offered is an asynchronous port, and four Layer 2 switched LAN ports–any of which can also be reconfigured as a DMZ.

Simple Plug-in flexibility

A range of different PICs can be plugged into the PIC bay, including high speed E1/T1, V35/V21 sync and BRI/PRI ISDN, allowing a high degree of flexibility and a wide choice of WAN connectivity. The onboard management/async port can be used for local management or for connection to an external modem.

Security

Allied Telesis' high performance Stateful Inspection Firewall significantly enhances the overall security of business critical information. The AT-AR415S delivers up to 100 Mbps of firewall throughput, and on board hardware encryption offers DES, 3DES and AES (Advanced Encryption Standard) hardware encryption, that uses up to 256 bit key code.

The AT-AR415S also has integrated hardware Virtual Private Network (VPN) acceleration delivering up to 95 Mbps of 3DES VPN + NAT and firewall throughput and up to 80 Mbps of AES-256 VPN + NAT and firewall throughput[1].

AES-Encrypted VPN

The AT-AR415S secure modular router supports the Advanced Encryption Standard (AES). AES is a Federal Information Processing Standard (FIPS 197) that specifies a cryptographic algorithm for use by U.S. Government organizations to protect sensitive, unclassified information.

VPN IPsec

IPsec (Internet Protocol Security) is a set of protocols for security at the network or packet processing layer. Early approaches to security were performed at the application layer of the communications model. IPsec is critical for secure virtual private networks and for remote user access through dial-up connections to private networks.

802.1Q VLAN

The AT-AR415S security router is 802.1Q compliant. This enables the user to configure up to 64 VLANs with VLAN Identifier numbers (VID) between one and 4,094.

The 802.1Q specification establishes a standard method for inserting VLAN membership information into Ethernet frames. VLANs can span many switches. VLANs between switches are achieved by inserting a tag with a VID between one and 4,094 into each frame. A VID must be assigned for each VLAN. By assigning the same VID to VLANs on many switches, one or more VLANs (broadcast domains) can be extended across a large network.

The AT-AR415S can firewall between VLANs thus providing protection within the network from internal attacks.

[1] *Performance numbers subject to change.*

[2] *Additional licensing required.*

Key Features

- 1 PIC bay supporting a range of WAN connections
- 1 Ethernet 10/100Mbps WAN port
- 4 Ethernet 10/100Mbps LAN ports
- 1 Async port (RJ45)
- Stateful Inspection Firewall
- AES, 3DES, DES hardware based encryption
- MD5 / SHA
- Up to 50 VPN tunnels[2]
- L2TP
- Supports Windows XP, 2000 VPN clients that use pre-shared keys and X509 Certificates
- PPPoE
- Protection against Denial of Service attacks
- SSH / SSL
- 802.1x
- SMTP and HTTP proxy
- RADIUS / TACAS+ look-up
- PAP / CHAP user authentication
- RoHS compliant

AT-AR415S | Secure Modular Router

Firewall

Allied Telesis' high performance Stateful Inspection Firewall provides a high level of security by supplying full application-layer awareness without breaking the client/server model.

Allied Telesis' Stateful Inspection Firewall:

- Offers per packet dynamic access control (Stateful Inspection) for all traffic reaching the firewall
- Protects against a wide range of Denial of Service (DOS) attacks, including Ping of Death, Smurf attacks, port scans, fragment attacks and IP Spoofing
- Sends automatic email alerts to initiate appropriate action

Software Quality of Service

The AlliedWare™ operating system provides advanced Quality of Service (QoS) and traffic shaping features. There are five key QoS features available on the AT-AR415S:

- Bandwidth Metering
- RED Curves
- Mixed Scheduling
- Virtual Bandwidth
- Dynamic Application Recognition (DAR)

Software QoS also supports eight queues per interface. DAR is used to snoop for session setup exchanges and dynamically create classifiers that match the voice and video packets in the session. For more information, see the Allied Telesis Advanced QoS White Paper available on our website.

Triggered Events and Scripts

A trigger sets off an ordered sequence of scripts and router commands to be executed when a certain event occurs. This is a powerful mechanism for automating the execution of router commands in response to specific events. Each trigger may reference multiple scripts and any script can be used by any trigger. Using this feature, the AT-AR415S can, for example, send an email alert to the network manager when trouble occurs, or can automatically shut down an interface to protect against suspected attacks.

The scripting facility enables sequences of commands to be stored in a script and replayed at any time, allowing the AT-AR415S to be easily configured or quickly re-configured. This is useful when developing a complex configuration, making the same configuration change to several different routers, Layer 3 switches or security appliances, or introducing a configuration change that must occur at a particular time. Scripts can be created on a PC and uploaded to the router, or they can be created using the router's own integrated text editor. They can be activated either from the command line or from a trigger.

World Class Operating System

The AT-AR415S is shipped 'ready to run' with AlliedWare, a comprehensive software suite that includes all the features, management capabilities and performance that today's networks demand.

AlliedWare is Allied Telesis' feature rich operating system (OS) that serves as the foundation for its entire line of Layer 3 routers and switches. Robust and reliable, the AlliedWare OS offers a breadth of functionality for any application.

AlliedWare also delivers a high level of flexibility and investment protection. AlliedWare is a common OS, so the AT-AR415S secure modular router is able to interoperate seamlessly with other Allied Telesis security appliances and Layer 3 switches. As a standards-based implementation, AlliedWare also assures full interoperability with all other major network equipment vendors.

Feature licenses give access to a set of progressive features:

- The Advanced Layer 3 Upgrade provides a set of cutting edge protocols such as IPv6, BGP-4 and Server Load Balancing.
- The Firewall Licensing Upgrade can increase the concurrent firewall sessions from 2000 to 4000 or 8000.
- VPN Licensing Upgrades allow for the base unit with a single VPN tunnel to be upgraded to 5, 10, 25 or 50 concurrent users.

Graphical User Interface

The AT-AR415S' Graphical User Interface (GUI) allows for swift, pain free configuration and management.

The following major features are incorporated in the AT-AR415S GUI:

- Easy configuration for connection to the Internet
- PPP over Ethernet configuration and monitoring
- DHCP server configuration and monitoring
- Firewall configuration and monitoring, ability to view events, logs and device status
- IPsec configuration
- Site-to-site and Remote Access VPN wizards[3]

Hardware Features

- 1 x 10/100Mbps Ethernet WAN port
- 4 x 10/100Mbps Ethernet LAN ports
- 1 x asynchronous port (RJ45)
- 1 x PIC bay
- 802.1q tagged VLANs, with support for up to any 64 VLAN IDs of a possible 4094 (LAN ports only)
- Automatic MDI/MDI-X crossover with user override via software commands (LAN ports only)
- 266MHz CPU
- 32MB SDRAM
- 16MB of Flash memory enabling storage of 2 software releases
- On-board hardware security processor enabling the following advanced encryption function:
  - Complete processing of IPsec header and trailer
  - Support for 3DES, DES, DES-MAC, AES, SHA-1 and MD-5
  - PKI acceleration for Diffie-Hellman, RSA and DSA
  - D-H negotiation (with 1024-bit modulus, 180-bit exponent)
  - 1024-bit sign and verify RSA and DSA

Real Time Clock

The real time clock (RTC) keeps track of current date and time. During times when the system has been powered down, a backup battery supplies power to the RTC.

Port Interface Cards

AT-AR020	Single configurable E1/T1 interface that supports channelized/unchannelized Primary Rate ISDN/Frame Relay
AT-AR021S (V3)[4]	Single Basic Rate ISDN (S/T) interface
AT-AR023	Single Synchronous port up to 2Mbps to an external CSU/DSU (AT-V.35-DTE-00 or AT-X.21-DTE-00 cable required)
AT-AR024	Four Asynchronous RS232 interfaces to 115Kbps
AT-AR027	Two VoIP FXS ports

[3] *Available in AlliedWare 2.9.1*

[4] *AR021S (V3) requires AlliedWare® Operating System version 2.9.1-13 or later*

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Software Features

- Secure VPN option
- IPsec (AES, 3DES, DES, DES-MAC, MD5, SHA-1)
- Stateful Inspection Firewall
- Network Address Translation (NAT)
- CLI, PAP and CHAP
- RADIUS, TACACS
- PKI for IKE/IPsec
- SSL
- SecureShell remote management
- UPnP v1.0
- Generic Routing Encapsulation
- Dynamic IP address assignment
- L2TP (Layer 2 Tunneling Protocol)
- DHCP
- PPPoE
- IP packet filtering
- IP multihoming
- Demand IP and IPX
- IPX/SPX spoofing
- Spanning tree on Bridge Ports
- BAP/BACP (Bandwidth Allocation Protocol)
- PPP multilink
- Callback
- IP/IPX and bridge filtering
- Advanced routing protocols OSPF, BGP-4, RIP and RIPv2
- Multicast protocols DVMRP, PIM-SM, PIM-DM
- SNMP management v2c and SNMPv3
- GUI
- OSI
- Server Load Balancer
- IPv6
- IP, IPX routing
- RSVP
- VRRP
- IP Packet prioritization
- STAC data compression (s/w only)

Reliability

System MTBF:	90,000 hours min
PSU MTBF:	150,000 hours min
Base MTBF:	533,000 hours min

Power Characteristics

100 to 240vAC, 50 to 60Hz

Physical Dimensions

1U rack mount (with included kit),
Depth 190mm,
Width 305mm (440mm width with the included rack mount kit fitted)
Weight 1.75 kg (3.75lbs)

Regulatory Approvals

EMC Emissions: EN55022 class A, FCC class A, VCCI class A, AS/NZS CISPR22 class A
Immunity: EN55024
Safety: UL60950, CAN/CSA-C22.2NO. 60950-00, EN60950
Listing: UL, cUL, TUV

Environmental Specifications

Operating temperature range:
0°C to 40°C (32°F to 104°F)
Storage temperature range:
-25°C to 70°C (-13°F to 158°F)
Relative humidity range:
5 to 95% non-condensing

Standards and Protocols

Software Release 2.9.1

BGP-4

RFC 1771 Border Gateway Protocol 4
RFC 1966 BGP Route Reflection
RFC 1997 BGP Communities Attribute
RFC 1998 Multi-home Routing
RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option
RFC 2439 BGP Route Flap Damping
RFC 2858 Multiprotocol Extensions for BGP-4
RFC 2918 Route Refresh Capability for BGP-4
RFC 3065 Autonomous System Confederations for BGP
RFC 3392 Capabilities Advertisement with BGP-4

Encryption

RFC 1321 MD5
RFC 2104 HMAC
RFC 2451 The ESP CBC-Mode Cipher Algorithms
FIPS 46-3 DES
FIPS 46-3 3DES
FIPS 180 SHA-1
FIPS 186 RSA
FIPS 197 AES
FIPS 140-2 Compliant

Ethernet

RFC 894 Ethernet II Encapsulation
IEEE 802.1D MAC Bridges
IEEE 802.1G Remote MAC Bridging
IEEE 802.1Q Virtual LANs
IEEE 802.2 Logical Link Control
IEEE 802.3ac VLAN TAG
IEEE 802.3u 100BASE-T
IEEE 802.3x Full Duplex Operation

Frame Relay

RFC 1490, 2427 Multiprotocol Interconnect over Frame Relay
ANSI T1S1 Frame relay

General Routing

RFC 768 UDP
RFC 791 IP
RFC 792 ICMP
RFC 793 TCP
RFC 826 ARP
RFC 903 Reverse ARP
RFC 925 Multi-LAN ARP
RFC 950 Subnetting, ICMP
RFC 1027 Proxy ARP
RFC 1035 DNS
RFC 1055 SLIP
RFC 1122 Internet Host Requirements
RFC 1144 Van Jacobson's Compression
RFC 1256 ICMP Router Discovery Messages
RFC 1288 Finger
RFC 1332 The PPP Internet Protocol Control Protocol (IPCP)
RFC 1334 PPP Authentication Protocols
RFC 1377 The PPP OSI Network Layer Control Protocol (OSINLCP)
RFC 1518 CIDR
RFC 1519 CIDR
RFC 1542 BootP
RFC 1552 The PPP Internetworking Packet Exchange Control Protocol (IPXCP)
RFC 1570 PPP LCP Extensions
RFC 1582 RIP on Demand Circuits
RFC 1598 PPP in X.25
RFC 1618 PPP over ISDN
RFC 1661 The Point-to-Point Protocol (PPP)
RFC 1662 PPP in HDLC-like Framing
RFC 1701 GRE
RFC 1702 GRE over IPv4
RFC 1812 Router Requirements
RFC 1877 PPP Internet Protocol Control Protocol Extensions for Name Server Addresses
RFC 1918 IP Addressing
RFC 1962 The PPP Compression Control Protocol (CCP)
RFC 1968 The PPP Encryption Control Protocol (ECP)
RFC 1974 PPP Stac LZS Compression Protocol
RFC 1978 PPP Predictor Compression Protocol
RFC 1989 PPP Link Quality Monitoring
RFC 1990 The PPP Multilink Protocol (MP)
RFC 1994 PPP Challenge Handshake Authentication Protocol (CHAP)
RFC 2131 DHCP
RFC 2125 The PPP Bandwidth Allocation Protocol (BAP) / The PPP Bandwidth Allocation Control Protocol (BACP)
RFC 2390 Inverse Address Resolution Protocol
RFC 2516 A Method for Transmitting PPP Over Ethernet (PPPoE)
RFC 2661 L2TP
RFC 2822 Internet Message Format
RFC 2878 PPP Bridging Control Protocol (BCP)
RFC 3022 Traditional NAT
RFC 3046 DHCP Relay Agent Information Option
RFC 3232 Assigned Numbers
RFC 3993 Subscriber-ID Suboption for DHCP Relay Agent Option
"IPX Router Specification", v1.2, Novell, Inc., Part Number 107-000029-001
ISO 10589, ISO 10589 Technical Corrigendums 1, 2, 3, ISO Intermediate System-to-Intermediate System
ISO 8473, relevant parts of ISO 8348(X.213), ISO 8343/Add2, ISO 8648, ISO 8648, ISO TR 9577 Open System Interconnection
ISO 9542 End System to Intermediate System Protocol
draft-ietf-ipsec-nat-t-ike-08.txt Negotiation of NAT-Traversal in the IKE
draft-ietf-ipsec-udp-encaps-08.txt UDP Encapsulation of IPsec Packets
http://www.iana.org/assignments/bootp-dhcp-parameters BootP and DHCP parameters

IP Multicasting

RFC 1075 DVMRP
RFC 1112 Host Extensions
RFC 2236 IGMPv2
RFC 2362 PIM-SM
RFC 2715 Interoperability Rules for Multicast Routing Protocols
RFC 3973 PIM-DM
draft-ietf-idmr-dvmrp-v3-9 DVMRP

IPsec

RFC 1828 IP Authentication using Keyed MD5
RFC 1829 IPsec algorithm
RFC 2395 IPsec Compression - LZS
RFC 2401 Security Architecture for IP
RFC 2402 AH - IP Authentication Header
RFC 2403 IPsec Authentication - MD5
RFC 2404 IPsec Authentication - SHA-1
RFC 2405 IPsec Encryption - DES
RFC 2406 ESP - IPsec encryption
RFC 2407 IPsec DOI
RFC 2408 ISAKMP
RFC 2409 IKE
RFC 2410 IPsec encryption - NULL
RFC 2411 IP Security Document Roadmap
RFC 2412 OAKLEY
RFC 3173 IPComp - IPsec compression

IPv6

RFC 1981 Path MTU Discovery for IPv6
RFC 2080 RIPng for IPv6
RFC 2365 Administratively Scoped IP Multicast
RFC 2375 IPv6 Multicast Address Assignments
RFC 2460 IPv6
RFC 2461 Neighbour Discovery for IPv6
RFC 2462 IPv6 Stateless Address Autoconfiguration
RFC 2463 ICMPv6
RFC 2464 Transmission of IPv6 Packets over Ethernet Networks
RFC 2465 Allocation Guidelines for Ipv6 Multicast Addresses Management Information Base for IP Version 6: Textual Conventions and General Group
RFC 2466 Management Information Base for IP Version 6: ICMPv6 Group
RFC 2472 IPv6 over PPP
RFC 2526 Reserved IPv6 Subnet Anycast Addresses
RFC 2529 Transmission of IPv6 over IPv4 Domains without Explicit Tunnels
RFC 2710 Multicast Listener Discovery (MLD) for IPv6
RFC 2711 IPv6 Router Alert Option
RFC 2851 Textual Conventions for Internet Network Addresses
RFC 2893 Transition Mechanisms for IPv6 Hosts and Routers
RFC 3056 Connection of IPv6 Domains via IPv4 Clouds
RFC 3307 Allocation Guidelines for IPv6 Multicast Addresses
RFC 3315 DHCPv6
RFC 3484 Default Address Selection for IPv6
RFC 3513 IPv6 Addressing Architecture
RFC 3587 IPv6 Global Unicast Address Format
RFC 3596 DNS Extensions to support IPv6
RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6

ISDN

ANSI T1.231-1997 Digital Hierarchy - Layer 1 In-Service Digital Transmission Performance Monitoring Standardization
ANSI T1.403-1995 Telecommunications - Network-to-Customer Installation - DS1 Metallic Interface
ANSI T1.408-1990 ISDN Primary Rate - Customer Installation Metallic Interfaces, Layer 1 Specification
AT&T TR 54016-1989 Requirements for Interfacing Digital Terminal Equipment to Services Employing the Extended Superframe Format
Austel TS 013.1:1990 General Requirements for Customer Equipment Connected to ISDN Basic Rate Access - Vol. 1: Customer Equipment Access Interface Specifications
Bellcore SR-3887 1997 National ISDN Primary Rate Interface
ETS 300 012:1992 Integrated Services Digital Network (ISDN); Basic user-network interface; Layer 1 specification and test principles
ETS 300 102-1:1990 Integrated Services Digital Network (ISDN);User-network interface layer 3;Specifications for basic call control
ETS 300 102-2:1990 Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control; Specification Description Language (SDL) diagrams
ETS 300 125:1991 Integrated Services Digital Network (ISDN); User-network interface data link layer specification; Application of CCITT Recommendations Q.920/I.440 and Q.921/I.441
ETS 300 153:1992 Integrated Services Digital Network (ISDN);Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access (Candidate NET 3 Part 1)
ETS 300 156:1992 Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN primary rate access (Candidate NET 5)
ETS 300 011:1992 Integrated Services Digital Network (ISDN); Primary rate user-network interface; Layer 1 specification and test principles
G.706 (1988) Frame Alignment and CRC Procedures Relating to Basic Frame Structures Defined in G.704
G.794 (1988) Characteristics of 24-channel transmultiplexing equipments
German Monopol (BAPT 221) Type Approval Specification for Radio Equipment for Tagging and Identification
I.120 (1988) Integrated services digital networks (ISDNs)
I.121 (1988) Broadband aspects of ISDN
I.411 (1988) ISDN user-network interface reference configurations
I.430 (1988) Basic user-network interface - Layer 1 specification
I.431 (1988) Primary rate user-network interface - Physical layer specification
ITU-T G.703 Physical/electrical characteristics of hierarchical digital interfaces
ITU-T G.704 Synchronous frame structures used at 1544, 6312, 2048, 8488 and 44736 kbit/s hierarchical levels
ITU-T G.706 Frame Alignment and CRC Procedures Relating to Basic Frame Structures Defined in G.704
ITU-T Q.922 ISDN data link layer specification for frame mode bearer services
ITU-T G.703 (1972) Physical/electrical characteristics of hierarchical digital interfaces
Japan NTT I.430-a Leased Line Basic Rate User-Network Interface Layer 1-Specification
New Zealand Telecom TNA 134 Telecom ISDN User-Network Interface: Layer 3: PART B Basic Call Control Procedures
Q.920 (1988) Digital subscriber Signalling System No.1 (DSS1) - ISDN user-network interface data link layer - General aspects
Q.921 (1988) ISDN user-network interface - Data link layer specification
Q.930 (1988) Digital subscriber Signalling System No. 1 (DSS 1) - ISDN user-network interface layer 3 - General aspects
Q.931 (1988) Digital subscriber Signalling System No. 1 (DSS 1) - ISDN user-network interface layer 3 specification for basic call control
Rockwell Bt8370 Fully Intergrated T1/E1 Framer and Line Interface data sheet
Technical Reference of Frame Relay Interface, Ver. 1, November 1993, Nippon Telegraph and Telephone Corporation. Ver. 1, November 1993, Nippon Telegraph and Telephone Corporation.
ACA TS 013.2:1990 General Requirements for Customer Equipment Connected to ISDN Basic Rate Access, Vol 2: Conformance Testing Specifications
ACA TS 014.1:1990 General Requirements for Customer Equipment Connected to ISDN Primary Rate Access, Vol 1: Customer Access Interface Specifications
ACA TS 014.2:1990 General Requirements for Customer Equipment Connected to ISDN Primary Rate Access, Vol 2: Conformance Testing Specifications

Management

RFC 1155 MIB
RFC 1157 SNMP
RFC 1212 Concise MIB definitions
RFC 1213 MIB-II
RFC 1493 Bridge MIB
RFC 1643 Ethernet MIB
RFC 1657 Definitions of Managed Objects for BGP-4 using SMIv2
RFC 2011 SNMPv2 MIB for IP using SMIv2
RFC 2012 SNMPv2 MIB for TCP using SMIv2
RFC 2096 IP Forwarding Table MIB
RFC 2576 Coexistence between V1, V2, and V3 of the Internet-standard Network Management Framework
RFC 2578 Structure of Management Information Version 2 (SMIv2)
RFC 2579 Textual Conventions for SMIv2
RFC 2580 Conformance Statements for SMIv2
RFC 2665 Definitions of Managed Objects for the Ethernet-like Interface Types
RFC 2674 Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions (VLAN)
RFC 2790 Host MIB
RFC 2819 RMON (groups 1,2,3 and 9)
RFC 2856 Textual Conventions for Additional High Capacity Data Types
RFC 2863 The Interfaces Group MIB
RFC 3164 Syslog Protocol
RFC 3289 Management Information Base for the Differentiated Services Architecture
CDP
RFC 3410 Introduction and Applicability Statements for Internet-Standard Management Framework
RFC 3411 An Architecture for Describing SNMP Management Frameworks
RFC 3412 Message Processing and Dispatching for the SNMP
RFC 3413 SNMP Applications
RFC 3414 User-based Security Model (USM) for SNMPv3
RFC 3415 View-based Access Control Model (VACM) for the SNMP
RFC 3416 Version 2 of the Protocol Operations for SNMP
RFC 3417 Transport Mappings for the SNMP
RFC 3418 MIB for SNMP
RFC 3636 Definitions of Managed Objects for IEEE 802.3 MAUs
RFC 3768 VRRP

draft-ietf-bridge-8021x-00.txt Port Access Control MIB
IEEE 802.1AB LLDP

OSPF
RFC 1245 OSPF protocol analysis
RFC 1246 Experience with the OSPF protocol
RFC 1586 OSPF over Frame Relay
RFC 1793 Extending OSPF to Support Demand Circuits
RFC 2328 OSPFv2
RFC 3101 The OSPF Not-So-Stubby Area (NSSA) Option

Quality of Service
RFC 2205 Reservation Protocol
RFC 2211 Controlled-Load
RFC 2474 DCSP in the IPv4 and IPv6 Headers
RFC 2475 An Architecture for Differentiated Services
RFC 2597 Assured Forwarding PHB Group
RFC 2697 A Single Rate Three Color Marker
RFC 2698 A Two Rate Three Color Marker
RFC 3246 An Expedited Forwarding PHB (Per-Hop Behavior)
IEEE 802.1p Priority Tagging

RIP
RFC 1058 RIPv1
RFC 2082 RIP-2 MD5 Authentication
RFC 2453 RIPv2

Security
RFC 959 FTP
RFC 1413 IDP
RFC 1492 TACACS
RFC 1779 X.500 String Representation of Distinguished Names.
RFC 1858 Fragmentation
RFC 2284 EAP
RFC 2510 PKI X.509 Certificate Management Protocols
RFC 2511 X.509 Certificate Request Message Format
RFC 2559 PKI X.509 LDAPv2
RFC 2585 PKI X.509 Operational Protocols
RFC 2587 PKI X.509 LDAPv2 Schema
RFC 2865 RADIUS
RFC 2866 RADIUS Accounting
RFC 3280 X.509 Certificate and CRL profile
draft-grant-tacacs-02.txt TACACS+
Draft-IETF-PKIX-CMP-Transport-Protocols-01 Transport Protocols for CMP
draft-ylonen-ssh-protocol-00.txt SSH Remote Login Protocol
IEEE 802.1x Port Based Network Access Control
PKCS #10 Certificate Request Syntax Standard
Diffie-Hellman

Services
RFC 854 Telnet Protocol Specification
RFC 855 Telnet Option Specifications
RFC 856 Telnet Binary Transmission
RFC 857 Telnet Echo Option
RFC 858 Telnet Suppress Go Ahead Option
RFC 932 Subnetwork addressing scheme
RFC 951 BootP
RFC 1091 Telnet terminal-type option
RFC 1179 Line printer daemon protocol
RFC 1305 NTPv3
RFC 1350 TFTP
RFC 1510 Network Authentication
RFC 1542 Clarifications and Extensions for the Bootstrap Protocol
RFC 1945 HTTP/1.0
RFC 1985 SMTP Service Extension
RFC 2049 MIME
RFC 2068 HTTP/1.1
RFC 2156 MIXER
RFC 2217 Telnet Com Port Control Option
RFC 2821 SMTP

SSL
RFC 2246 The TLS Protocol Version 1.0
draft-freier-ssl-version3-02.txt SSLv3

VoIP
RFC 2543 SIP
G.711 A/μ law Pulse code modulation (PCM) of voice frequencies
G.723.1 Dual rate speech coder for multimedia communications transmitting at 5.3 and 6.3 kbit/s
G.729 A/B (Optional) Coding of speech at 8 kbit/s using conjugate-structure algebraic-code-excited linear-prediction (CS-ACELP)
H.323 v2 Packet-based multimedia communications systems

X.25
RFC 1356 Multiprotocol Interconnect on X.25 and ISDN in the Packet Mode
ITU-T Recommendations X.25 (1988), X.121 (1988). X.25

Ordering Information

AT-AR415S-xx
Order number: 990-11847-xx

Where xx =
10 for U.S. power cord
20 for no power cord
30 for U.K. power cord
40 for Australia power cord
50 for Europe power cord

The AT-AR415S ships with a rack mount kit.

Optional wall mount kit
Order number: 990-11009-00

Software upgrade options
AT-AR400 – ADVL3UPGRD
AR400 Series Advanced Layer 3 Upgrade
- IPv6
- BGP-4
- Server Load Balancing

Order number: 980-10021-00

AT-FL-15
WAN Load Balancer (feature license)
Order number: 980-000038

Firewall licensing options
AT-FL-18B
4000 session firewall license
Order number: 980-000046

AT-FL-18C
8000 session firewall license
Order number: 980-000047

VPN licensing options
AT-FL-19B
5 concurrent VPN sessions
Order number: 980-000094

AT-FL-19C
10 concurrent VPN sessions
Order number: 980-000095

AT-FL-19D
25 concurrent VPN sessions
Order number: 980-000096

AT-FL-19E
50 concurrent VPN sessions
Order number: 980-000097

Hardware upgrade options

Port Interface Cards
AT-AR020
Single configurable E1/T1 interface that supports channelized/unchannelized Primary Rate ISDN/Frame Relay
Order Number: 990-001304-00

AT-AR021S (V3)[4]
Single Basic Rate ISDN (S/T) interface
Order Number: 990-002153-00

AT-AR023
Single Synchronous port up to 2Mbps to an external CSU/DSU (AT-V.35-DTE-00 or AT-X.21-DTE-00 cable required)
Order number: 990-001104-00

AT-AR024
Four Asynchronous RS232 interfaces to 115Kbps
Order number: 990-001105-00

AT-AR027
Two VoIP FXS ports
Order number: 990-001356-00

[4] *AR021S (V3) requires AlliedWare® Operating System version 2.9.1-13 or later*

About Allied Telesis

Allied Telesis is part of the Allied Telesis Group. Founded in 1987, the company is a global provider of secure Ethernet/IP access solutions and an industry leader in the deployment of IP Triple Play networks over copper and fiber access infrastructure. Our POTS-to-10G iMAP integrated Multiservice Access Platform and iMG intelligent Multiservice Gateways, in conjunction with advanced switching, routing and WDM-based transport solutions, enable public and private network operators and service providers of all sizes to deploy scalable, carrier-grade networks for the cost-effective delivery of packet-based voice, video and data services. Visit us online at www.alliedtelesis.com.

Service and Support

Allied Telesis provides value-added support services for its customers under its Net.Cover programs. For more information on Net.Cover support programs available in your area, contact your Allied Telesis sales representative or visit our website: www.alliedtelesis.com

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